Claim Amendments

Please amend the claims as follows:

3. (Previously presented) The method of claim 20, wherein said DNA is non-genomic DNA.

4. (Previously presented) The method of claim 20, wherein said DNA is cDNA.

20. (Currently amended) A method of subjecting a DNA molecule to a DNA synthesis reaction, comprising the steps of:

a) preparing ~~obtaining~~ a DNA molecule by positioning ~~having~~ a first linker sequence ~~positioned~~ at one end of the DNA molecule and a second linker sequence, different from said first linker sequence, ~~positioned~~ at the other end of the DNA molecule; and

b) subjecting said DNA to a DNA synthesis reaction with a primer set comprising:

i) a first primer set population, wherein the 5' sequence of primers of said first primer set population is complementary to said first linker sequence and the 3' sequence of primers of said first primer set population comprises a specificity region; and

ii) a second primer set population, wherein the 5' sequence of primers of said second primer primer set population is complementary to said second linker sequence and the 3' sequence of primers of said second primer set population comprises a specificity region;

wherein said specificity regions of said first and second primer set populations collectively reflect all possible sequence combinations of A, T, G and C ~~both the specificity regions of both the first and second primers comprise random sequences~~.

21. (Previously presented) The method of claim 85, wherein said amplification is performed with an array of combinations of alternate amplification primers.

23. (Previously presented) The method of claim 85, further comprising, identifying the amplified DNA.

24. (Previously presented) The method of claim 23, wherein said identification is based upon length.

25. (Previously presented) The method of claim 23, wherein said identification is performed by a computer program.

26. (Previously presented) The method of claim 21, wherein said array of amplifications is performed in a multi-well plate.

27. (Previously presented) The method of claim 20, wherein the specificity region of the primers of the first primer set is 3,4,5,6,7 or 8 base pairs long.

28. (Previously presented) The method of claim 20, wherein the specificity region of the primers of the second primer set is 3,4,5,6,7 or 8 base pairs long.

29. (Previously presented) The method of claim 85, wherein said amplification comprises polymerase chain reaction, nucleic acid sequence based amplification, transcription mediated amplification, strand displacement amplification or ligase chain reaction.

36. (Previously presented) The method of claim 85, wherein a label is incorporated into said amplified DNA.

37. (Previously presented) The method of claim 36, wherein said label is incorporated by means of a labeled primer.

38. (Previously presented) The method of claim 36, further comprising, partial nucleotide sequence identification of the amplified products by the identity of the label.

39. (Previously presented) The method of claim 36, wherein said label is a chromophore.

40. (Previously presented) The method of claim 36, wherein said label is a fluorophore.

41. (Previously presented) The method of claim 36, wherein said label is an affinity label.

42. (Previously presented) The method of claim 36, wherein said label is a dye.

43. (Previously presented) The method of claim 37, wherein the 5' end of said primer comprises an amino moiety and a flurophore is covalently attached by the reaction of a succinimido ester of the flurophore to the 5' amino-modified primer.

44. (Previously presented) The method of claim 40, wherein said fluorophore is Alexa 350, Alexa 430, AMCA, BODIPY 630/650, BODIPY 650/665, BODIPY-FL, BODIPY-R6G, BODIPY-TMR, BODIPY-TRX, Cascade Blue, Cy2, Cy3, Cy5,6-FAM, Fluorescein, HEX, 6-JOE, Oregon Green 488, Oregon Green 500, Oregon Green 514, Pacific Blue, REG, Rhodamine Green, Rhodamine Red, ROX, TAMRA, TET, Tetramethylrhodamine, and Texas Red.

45. (Previously presented) The method of claim 20, wherein the products of said DNA synthesis reaction are analyzed.

46. (Previously presented) The method of claim 45, wherein said analysis of products is by polyacrylamide gel electrophoresis.

47. (Previously presented) The method of claim 45, wherein said analysis of products is by capillary gel electrophoresis.

48. (Previously presented) The method of claim 45, wherein said analysis of products is by mass spectrophotometry.

49. (Previously presented) The method of claim 45, wherein said analysis of products is by energy transfer.

50. (Previously presented) The method of claim 45, wherein said analysis of products is by a filtration and extraction device.

51. (Previously presented) The method of claim 45, wherein said analysis of products is by the use of interlaced lasers and multiple fluorescent measurements.

52. (Previously presented) The method of claim 45, wherein said analysis of products comprises quantifying amplification products.

53. (Previously presented) The method of claim 52, wherein said quantifying is by measuring the ratio of each product to a co-amplified reference-gene.

54. (Previously presented) The method of claim 52, wherein said quantifying is by measuring the ratio of each product to a panel of reference-genes.

55. (Previously presented) The method of claim 52, wherein said analysis of products is by Real-Time PCR.

56. (Previously presented) The method of claim 45, wherein said analysis of products is performed in a multi-well plate.

57. (Previously presented) The method of claim 45, wherein said analysis of products is performed on a membrane.

58. (Previously presented) The method of claim 45, wherein said analysis of products is performed on a solid matrice.

59. (Previously presented) The method of claim 58, wherein said solid matrice is a DNA chip.

60. (Previously presented) The method of claim 20, performed on DNA derived from a normal cell or tissue and on DNA derived from a different cell or tissue.

61. (Previously presented) The method of claim 20, performed on DNA derived from a normal cell or tissue and on DNA derived from a cancerous cell or tissue.

62. (Previously presented) The method of claim 20, performed on DNA derived from a normal cell or tissue and on DNA derived from a cell or tissue treated with a pharmaceutical compound.

63. (Previously presented) The method of claim 20, performed on DNA derived from a normal cell or tissue and on DNA derived from a cell or tissue treated with a teratogenic compound.

64. (Previously presented) The method of claim 20, performed on DNA derived from a normal cell or tissue and on DNA derived from a cell or tissue treated with a carcinogenic compound.

65. (Previously presented) The method of claim 20, performed on DNA derived from a normal cell or tissue and on DNA derived from a cell or tissue treated with a toxic compound.

66. (Previously presented) The method of claim 20, performed on DNA derived from a normal cell or tissue and on DNA derived from a cell or tissue treated with a biological response modifier.

67. (Previously presented) The method of claim 20, performed on DNA derived from a normal cell or tissue and on DNA derived from a cell or tissue treated with a hormone, a hormone agonist or a hormone antagonist.

68. (Previously presented) The method of claim 20, performed on DNA derived from a normal cell or tissue and on DNA derived from a cell or tissue treated with a cytokine.

69. (Previously presented) The method of claim 20, performed on DNA derived from a normal cell or tissue and on DNA derived from a cell or tissue treated with a growth factor.

70. (Previously presented) The method of claim 20, performed on DNA derived from a normal cell or tissue and on the DNA derived from a cell or tissue treated with the ligand of a known biological receptor.

71. (Previously presented) The method of claim 20, performed on more than one sample of DNA, wherein the DNA samples are derived from a cell or tissue type obtained from different species.

72. (Previously presented) The method of claim 20, performed on more than one sample of DNA, wherein the DNA samples are derived from a cell or tissue type obtained from different organisms.

73. (Previously presented) The method of claim 20, performed on more than one sample of DNA, wherein the DNA samples are derived from a cell or tissue at different stages of development.

74. (Previously presented) The method of claim 20, performed on more than one sample of DNA, wherein the DNA samples are derived from a normal cell or tissue and derived from a cell or tissue that is diseased.

75. (Previously presented) The method of claim 20, performed on more than one sample of DNA, wherein the DNA samples are derived from a cell or tissue cultured in vitro under different conditions.

76. (Previously presented) The method of claim 20, performed on the DNA derived from a cell or tissue from two organisms of the same species with a known genetic difference.

77.–84. (Cancelled)

85. (Previously presented) The method of claim 20, wherein the first and second primers are employed to amplify the DNA molecule.

86. (Previously presented) The method of claim 20, wherein the first and second primers are employed to sequence the DNA molecule.

87. (Canceled)

88. (Currently amended) A method of preparing a population of ~~paired~~ primer molecules, the primer molecules ~~pairs~~ having (a) a ~~predetermined~~ 5' sequence that incorporates a sequence that anneals to ~~a predetermined~~ the same linker sequence as other members of the population and (b) a random 3' terminal specificity region of from 3 to 8 nucleotides in length, such that the population of primer molecules have~~ing~~ specificity regions collectively reflecting

all possible sequence combinations of A, T, G and C, and wherein the 5' sequence of primer molecules of the first population anneal to ~~each member of the pair anneals to~~ a different ~~predetermined~~ linker sequence than do the 5' sequence of primer molecules of the second population~~from the other member of the pair~~, wherein the method includes incorporating a sequence that anneals to a linker into the 5' region of said primer molecules during their preparation.

89. (Canceled)